UNIVESITI TEKNOLOGY MARA

TECHNO-ECONOMICS COMPARISON OF VARIOUS OF WEED CONTROL APPLICATOR IN OIL PALM PLANTATION

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Final year project proposal Submitted for partial fulfillment
requirement for the degree of
Bachelor of Science (Hons) Plantation Technology & Management

Faculty of Plantation & Agrotechnology

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CANDIDATE'S DECLARATION

I declare that the work in this Final Year Project was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. The final year project report has not been submitted to any other academic institution or non academic institution for any other degree or qualification.

In the event that my Final Year Project is found to violate the conditions mention above, I voluntarily waive the right of conferment of my bachelor degree and agree to be subjected to the disciplinary rules and regulations of University Teknologi MARA

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ABSTRACT

A study was undertaken to evaluate the human energy expenditure, heart rate, field capacity and operating cost in oil palm plantation at Pembangunan Pertanian Melaka SDN. BHD. Based on recorded increasing of average of heart rate, conventional knapsack sprayer was found to be most strenuous operation, with an increasing of average of heart rate of 28.13 beats /min. There were significant differences in the increasing of average of heart rates of batteries operated knapsack sprayer and tractor mounted sprayer (power sprayer) with the increasing of average of heart rates for these two field operations being 14.63 and 17.83 beats /min, respectively. There highest average of energy expenditure of 6.90 kcal/ min was observed for conventional knapsack sprayer and the lowest average of energy expenditure of 3.80 kcal/ min was for tractor mounted sprayer. The highest field capacity was recorded for tractor mounted sprayer (Power Sprayer) was about 6.77 acre per hour; while the lowest was recorded for conventional knapsack sprayer (manual) was about 1.40 acre per hour. The results indicate that the average increasing of heart rate Beats / Min was positively linked to the human energy expenditure Kcal/ Min of the subjects, while the human energy expenditure Kcal/ Min was negatively linked to the field capacity. In the operation cost, it indicate that the tractor mounted sprayer was highest that estimated of total operation cost was about RM52.62/ hour, while the lowest was conventional knapsack sprayer (manual) that estimated to be RM9.08/hour .This study demonstrated that usage of farm machinery for field operations was significantly different in human energy expenditure, field capacity, heart rate and operation cost.

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